

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning on page 5, line 13 with the following amended paragraph:

According to the illustrated embodiment, system 10 includes sensor paths 20a-b, an image processor 22, and inverse optical transformer 24, and a display 26 coupled as illustrated in FIGURE 1. System 10 receives light reflected from an object. The light carries image information that may be used to generate an image of the object. Sensor paths ~~[[20a-c]]~~ 20a-b optically transform the received light and generate metrics that describe the optically transformed light. Image processor 22 processes the metrics in order to yield a processed metric. Inverse optical transformer 24 performs an inverse optical transform on the processed metric in order to generate an image that may be displayed at display 26.

Please replace the paragraph beginning on page 5, line 27 with the following amended paragraph:

According to one embodiment, sensor path 20a-b includes an optical transformer 30a-b, a sensor 32a-b, and a processor ~~[[32a-b]]~~ 34a-b coupled as illustrated in FIGURE 1. Optical transformer 30a-b may comprise any device operable to perform an optical transform on light, for example, a lens, a filter, or an electro-optical element. The optical transform may comprise a Fourier or Fourier-based transform, a geometrical transform, or any other suitable transform.

Please replace the paragraph beginning on page 7, line 19 with the following amended paragraph:.

Image processor 22 processes the metrics received from sensor path 20a-b to generate a processed metric. Image processor ~~[[24]]~~ 22 may perform any suitable type of image processing. For example, image processor may fuse the metrics to form a fused image. The metrics may be fused by selecting data from each metric, and then forming a processed metric from the selected data. The data may be selected based upon which metric includes the most image content.

“Each” as used in this document refers to each member of a set or each member of a subset of a set.

Please replace the paragraph beginning on page 10, line 16 with the following amended paragraph:

If there is a next sensor path 20b at step 116, the method returns to step 102 to select the next sensor path 20b. If there is no next sensor path at step 116, the method proceeds to step 118. Image processor 22 processes the metrics received from processors ~~[[34a-b]]~~ 32a-b to generate a processed metric. Image processor 22 may, for example, fuse the metrics or may use the metrics to locate a target. Inverse optical transformer 24 inversely optically transforms the processed metric at step 120 in order to invert the data. Display 26 reports the results at step 122. After reporting the results, the method terminates.